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Sutherland

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[54] **PROGRAMMABLE SHELF TAG AND
METHOD FOR CHANGING AND UPDATING
SHELF TAG INFORMATION**

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235/383**

[58] **Field of Search** **345/50, 51, 2;
340/825.35; 235/383; 359/101**

[56] **References Cited****U.S. PATENT DOCUMENTS**

4,291,304	9/1981	Walter	.....	345/50
4,500,880	2/1985	Gomersall et al.	.....	345/50
4,766,295	8/1988	Davis et al.	..	
4,948,232	8/1990	Lange	.....	345/50
5,111,196	5/1992	Hunt	.....	340/825.35
5,250,789	10/1993	Johnsen	.....	235/383

5,295,064	3/1994	Malec et al.	.....	340/825.35
5,380,991	1/1995	Valencia et al.	235/383
5,473,146	12/1995	Goodwin, III	..	
5,570,216	10/1996	Lu et al.	359/101

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[57] **ABSTRACT**

A shelf tag comprising a liquid crystal display having optical states which are stable without power and an interface that allows for each character element to be programmed easily by sweeping a programming device across the character element contacts with all power and signal requirements being supplied to the shelf tag by the programming device. The programming device can be integrated with a portable transaction computer equipped with a bar code reader or can be embodied in a stand-alone apparatus capable of receiving user input, displaying information and interfacing to the shelf tags. A method of using the shelf tags, the programming device and a radio frequency computer local area network are presented which automates many typical business applications such as inventory updating and simultaneously changing prices advertised on the shelf tags.

18 Claims, 8 Drawing Sheets

